CALIFORNIA HIGH-SPEED TRAIN

Project Environmental Impact Report / Environmental Impact Statement

Supplemental Alternatives Analysis Report

Fresno to Bakersfield Section

May 2011

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration

California High-Speed Train Project
Environmental Impact Report /
Environmental Impact Statement

Supplemental Alternatives Analysis Report

Fresno to Bakersfield Section

Prepared by
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ABBREVIATIONS/ACRONYMS

AA..... Alternatives Analysis
Amtrak ..... National Railroad Passenger Corporation
Authority ..... California High-Speed Rail Authority
BNSF..... Burlington Northern Santa Fe Railway
Caltrans..... California Department of Transportation
CDFG ..... California Department of Fish and Game
CEQA ..... California Environmental Quality Act
CGS..... California Geological Survey
CHSTP..... California High-Speed Train Project
CNG ..... Compressed Natural Gas
CNPS..... California Native Plant Society
COG ..... Council of Governments
CRHR ..... Californian Register of Historic Places
CWA..... Clean Water Act
EIR..... Environmental Impact Report
EIS..... Environmental Impact Statement
EMT ..... Engineering Management Team
FEMA..... Federal Emergency Management Agency
FRA..... Federal Railroad Administration
GIS ..... Geographic Information System
HMF ..... Heavy Maintenance Facility
HOV ..... High Occupancy Vehicle
HST..... High-Speed Train
KTR..... Kings-Tulare Regional
MPH ..... Miles per Hour
NB..... Northbound
NEPA..... National Environmental Policy Act
NRHP ..... National Register of Historical Places
PMT ..... Program Management Team
RCP..... Reinforced concrete pipe
ROW ..... Right-of-Way
SB..... Southbound
SP..... Southern Pacific
SR..... State Route
TM ..... Technical Memorandum
TOD ..... Transit-Oriented Development
USGS..... United States Geological Survey
UPRR..... Union Pacific Rail Road

EXECUTIVE SUMMARY
SUPPLEMENTAL ALTERNATIVES ANALYSIS
FRESNO TO BAKERSFIELD

ES.1 BACKGROUND AND PURPOSE OF THIS SUPPLEMENTAL ALTERNATIVES ANALYSIS

This May 2011 Fresno to Bakersfield Supplemental Alternatives Analysis (AA) Report updates the Preliminary AA Report that the California High-Speed Rail Authority (Authority) issued for the Fresno to Bakersfield high-speed train (HST) section in June 2010, and the Supplemental AA Report issued in September 2010. It presents documentation and analysis of modifications made to the alternatives contained in those prior reports, including:

- Additions of new alternatives (alignments, station site, and heavy maintenance facilities),
- Removal of existing alternatives,
- Shifts in the horizontal alignments of alternatives, and
- Changes in profiles of existing alternatives from elevated to at-grade.

These modifications are the result of eight months of alternatives development since September 2010 involving preliminary engineering, environmental impact analysis, public and stakeholder input, federal and state environmental agency input, and a 15% design review (review of engineering designs to identify most cost-effective solutions).

Each of the modifications recommended is based on one or more of the following benefits:

- Reduced impacts on sensitive natural resources and urban populations,
- Increased benefits to local residents, property owners, and business owners,
- Reduced project and stakeholder costs, and
- A less impacting, more cost-effective project overall.

ES.2 RECOMMENDATIONS

The staff recommends Board approval of the following modifications:

Fresno Subsection

- Change UPRR West Alternative profile from elevated to at-grade from San Joaquin Street to Jensen Avenue. Placing this 2.8-mile section of the project at-grade will provide benefits to city residents and property owners in terms of reduced noise and visual impacts, improved traffic flow because of several road grade separations over the Union Pacific Railroad, and greater freight railroad safety from closing of several at-grade crossings. Placing the alignment at-grade will enhance the City's ability to integrate the HST station into its plans for the downtown, as well as reduce overall life cycle costs for the HST project and for local stakeholders.

- Add an alternative station location at Mariposa Street. This location is a new alternate to the Kern Street location, which was included in the Preliminary AA Report as the only station location for the western alignment alternative. The City of Fresno believes this site is more

consistent with the City's vision for the station area, and will allow the City to establish the HST station as a focal point for its downtown economic development and redevelopment initiatives.

- Remove UPRR East and Crossover Alternatives from further consideration. The UPRR East Alternative parallels the UPRR West Alternative on the east side of the UPRR right-of-way. The Crossover Alternative is a combination of the UPRR West and East Alternatives that requires two crossovers of the UPRR facility. The benefits of removing these alternatives mirror those associated with the changing the western alignment from elevated to at-grade. In addition, removal of the eastern alignment has the added benefits of eliminating direct impacts to the historic SP Depot and allowing the City additional flexibility in planning for development of the property that otherwise would have been occupied by the HST guideway and structures. Removal of these alternatives has the added benefit of eliminating the need for expensive elevated crossings of the UPRR tracks.

Hanford/Kings County Subsection

- Shift existing alignment between Conejo and Corcoran in two locations. The locations are between Conejo and the proposed Kings-Tulare Regional (KTR) Station (east of Hanford at SR-198) and again between Idaho Avenue (south of the KTR Station) and Niles Avenue just north of Corcoran. In the case of the northern shift, the new alignment more directly follows property boundaries and the 7½ Avenue utilities corridor which runs north-south through the area. While this shift has the benefit of being less disruptive to agricultural properties and operations (including dairies) and of being more consistent with the Authority's objective of following existing transportation and utility corridors as closely as possible, it does result in displacement of several residential properties in the Lacey Rural Community. The southern shift allows the HST alignment to avoid the Kaweah Delta Water Conservation District's Tulare Lakebed Mitigation Site, which covers approximately 1,300 acres north of Corcoran (east of SR-43 and north of Nevada Avenue), as well as approximately five acres of sensitive wetlands and other aquatic resources. This shift also avoids key agricultural operations in the area west of SR-43.

Corcoran Subsection

- Add new alternative west of BNSF at-grade. This alternative begins at Nevada Avenue north of Corcoran and ends at Quebec Avenue (Avenue 144) south of Corcoran. Placement of this section at-grade provides benefits to city residents and property owners as a result of reduced noise and visual impacts, improved traffic flow because of several road grade separations over the BNSF tracks, and greater freight railroad safety from closing of several at-grade crossings. In addition, the HST project and local stakeholders will benefit from a reduction in overall life cycle costs.
- Shift Corcoran Bypass Alternative closer to Corcoran. As a result of the realignment of the Hanford alignment to avoid wetlands and other aquatic resources north of Corcoran, it is possible to shift the Corcoran Bypass Alternative west, closer to Corcoran. Because of this shift, the bypass is considerably shorter and has less impact on agricultural resources and facilities. It will, however, affect some residential properties in the area. Project life cycle costs are lower as well.

Allensworth Subsection

- Shift Allensworth Bypass Alternative to the west. This modification extends from approximately 5 miles north of Allensworth State Historic Park to Taussig Avenue, a total distance of 19.1 miles. This shift allows the alignment to avoid encroachment into sensitive natural resources, including wetlands and endangered species habitat, and reduces impacts on agricultural land and facilities as well.

Wasco-Shafter Subsection

- Shift BNSF Alternative closer to BNSF tracks near Kimberlina Road. This minor shift allows the HST alignment to operate closer to the BNSF, thereby largely eliminating "landlocked" property between the two facilities. (BNSF tracks will be shifted closer to the HST alignment in one location as well.) The shifted alignment also avoids agricultural property and facilities immediately east.

- North of Shafter: Change BNSF Alternative profile from elevated to at-grade. The profile change, located between Merced Ave and Fresno Avenue approximately (1.5 miles), results in the addition of two grade separations, thereby improving local traffic flow and freight railroad safety. The change reduces overall life cycle costs as well.

- South of Shafter: Change BNSF Alternative profile from elevated to at-grade, and shift alignment from east to west of BNSF. Modification is situated between Los Angeles Avenue south of Shafter to Hageman Road near Bakersfield, a total length of 9.2 miles. Placement of this section at-grade will benefit residents and property owners as a result of reduced noise and visual impacts, improved traffic flow because of several road grade separations over the BNSF tracks, and greater freight railroad safety due to closing several at-grade crossings. Shifting the alignment from the east side to the west side of the BNSF removes conflicts with the Shafter International Trade and Transportation Center and with the Shafter Cemetery. It also reduces the need to move or relocate various BNSF track facilities.

- Shift Wasco-Shafter Bypass Alternative slightly to the east. This realignment permits avoidance of a property eligible for placement on the National Register of Historic Places and on various active oil extraction and storage facilities in the area.

- Shift Shafter candidate heavy maintenance facility (HMF) site to west of BNSF. This shift is requested by Kern COG to provide for a competitive HMF site south of Shafter that can be accessed from the shifted alignment on the west side of BNSF. The total area of land required on the west, accessibility to jobs, and traffic impact are similar to those characteristics of the proposed HMF site on the east side of BNSF.

Bakersfield Subsection

- Change profile from elevated to at-grade between Hageman Road and Palm Avenue. The total length of this modification is 2.3 miles, and applies to both the Bakersfield North and South Alternatives. Changing to an at-grade profile benefits residents and property owners as a result of reduced noise and visual impacts, improved traffic flow because of several road grade separations over the BNSF tracks, and greater freight railroad safety from closing several at-grade crossings. The HST project and local stakeholders also received a

modest benefit in reducing life cycle costs. The change will, however, result in impacts to additional residential properties.

Use of BNSF Right-of-Way

- Change alignment definitions for all alternatives from "share BNSF right-of-way" to "remain adjacent to BNSF right-of-way." Through the Preliminary AA and Supplemental AA reports, it was planned that the HST would share BNSF right-of-way wherever possible to the extent allowed by safety considerations, BNSF business and operations requirements, and infrastructure conflicts. Subsequent discussions with the BNSF and refinement of preliminary designs has resulted in a need to change this approach – namely, to keep the HST outside of BNSF right-of-way, but otherwise remain as close as possible to them.

1.0 SUPPLEMENTAL ALTERNATIVES ANALYSIS

This May 2011 Fresno to Bakersfield Supplemental Alternatives Analysis (AA) Report updates the Preliminary AA Report that the California High-Speed Rail Authority (Authority) issued in June 2010 and the Supplemental AA Report published in September 2010.

This Supplemental AA has been prepared to document additional development and refinement of alignments and design options between Fresno and Bakersfield, recommending alternatives and design options to be further studied through the environmental process.

1.1 Previously Concurred-Upon Alignment Alternatives

To facilitate the analysis of potential alternatives, the Fresno to Bakersfield HST Section was divided into three subsections: Fresno, Rural, and Bakersfield (see Figure 1). The geographic limits for each subsection were chosen at points where the HST alignment alternatives meet, such that alignment alternatives for each subsection could be "mixed and matched" with those from each adjacent subsection. This Supplemental AA updates alignments in each of the three subsections. The alternatives previously identified to be carried forward for environmental analysis for the Fresno to Bakersfield Section in the Preliminary AA (June 2010) and Supplemental AA (September 2010) were as follows:

Fresno Subsection

- Elevated UPRR West / BNSF South
- Elevated UPRR East / BNSF South
- UPRR West/UPRR East Crossover Alternative (Combination of UPRR West and UPRR East)
- All recommended alternatives through Fresno are elevated, run adjacent to the Union Pacific Railroad, and provide for a station in downtown Fresno near Mariposa Street, the City's desired location.

Rural Subsection

- Full-Length Alignment: BNSF Route, West Side Shared Right-of-Way, Bypass east side of Hanford
- Local Options
    - Through Corcoran, East Side of BNSF, Elevated
    - Corcoran East Bypass, At-Grade
    - Allensworth Bypass Alternative, At-Grade (west of BNSF corridor)
    - Through Wasco and Shafter, Elevated
    - Wasco and Shafter Bypass, At-Grade
- Recommended Rural Subsection alternatives are largely at-grade and parallel the existing BNSF Railway where possible, including sections where BNSF right-of-way is shared. Through-town (elevated) and bypass (at-grade) options are retained in the vicinity of small communities (Corcoran, Wasco, and Shafter). A bypass is also provided in the vicinity of Allensworth State Historic Park and Pixley National Wildlife Refuge. All alternatives allow for a station in Kings County east of Hanford at SR-198.
- Note that the September 2011 Supplemental AA Report evaluated two alignment options through Hanford along the BNSF. One had a station in downtown Hanford and the other

had a station south of SR-198 in the southern part of Hanford. At its September 2, 2011, meeting, the Board directed staff not to carry these alternatives forward. In conjunction with this direction, the Board directed staff to investigate ways to minimize impacts on agricultural properties and operations on those alignments and options being carried forward based on the Preliminary AA Report direction.

Bakersfield Subsection

- Through BNSF Yard, North of East Bakersfield, South of UPRR, Elevated
- North of BNSF ROW, along California Avenue through East Bakersfield, South of UPRR, Elevated
- Recommended Bakersfield alternatives are both elevated; have slightly differing locations with respect to existing BNSF mainline and yard, major downtown buildings, and the low income community of East Bakersfield; and provide for a station adjacent to or near the existing Truxtun Avenue Amtrak station.

Heavy Maintenance Facility

Heavy Maintenance Facility sites recommended for continued study are (Figure ES 4, from north to south):

- Fresno Works – South of Fresno
- Kings County Economic Development Corporation – Southeast of Hanford
- Kern Council of Governments – Wasco
- Kern Council of Governments – Shafter

Figure 2 illustrates the previously concurred-upon alignments, stations, and heavy maintenance facilities for the Fresno Section.

Figure 1. Fresno to Bakersfield Section Preliminary AA Subsections

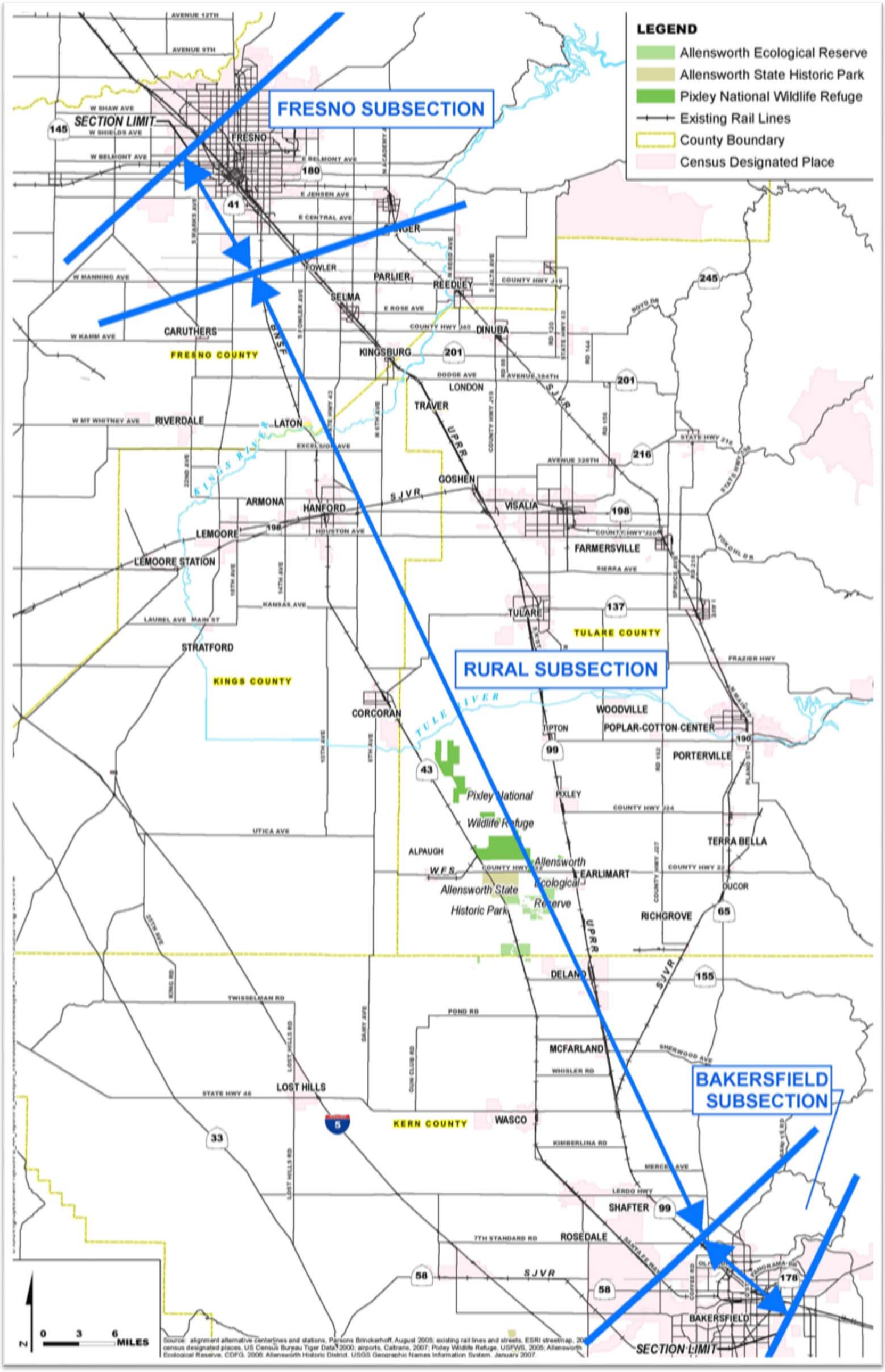


Figure 2. Alignment Alternatives, Station Locations, and Heavy Maintenance Facility Sites Carried Forward from Preliminary AA for Evaluation in the Draft EIR/EIS

1.2 Alignment and Design Modifications Considered

In response to input received through the community outreach process and as a result of more detailed investigation of the alternatives carried forward from the Preliminary AA Report and the September 2010 Supplemental AA Report, the project team considered a broad range of modifications throughout the Fresno to Bakersfield Section. In considering these refinements, it became clear that the sub-geography used for the Preliminary AA Report did not allow for sufficiently focused analysis of new opportunities, specifically within the Rural subsection. Thus, the Fresno to Bakersfield Section was divided into the following subsections (with previous subsection shown):

- Fresno (Fresno)
- Hanford/Kings County (Rural)
- Corcoran (Rural)
- Allensworth (Rural)
- Wasco-Shafter (Rural)
- Bakersfield (Bakersfield)

Based upon the input received and the more detailed investigation of the alignments, the following four types of modification were considered:

- Addition of New Alternatives (e.g., alignments, station sites, heavy maintenance facilities)
- Removal of Existing Alternatives
- Shifts in the Horizontal Alignment of Existing Alternatives (e.g., east-west, north-south)
- Changes in the Vertical Profile of Existing Alternatives (e.g., elevated to at-grade)

In evaluating the viability of such potential changes, the following benefits were considered:

- Reduced impacts on sensitive natural resources and urban populations,
- Increased benefits to local residents, property owners, and business owners,
- Reduced project and stakeholder costs, and
- A less impacting, more cost-effective project overall.

1.3 Specific Alignment Modifications Considered and Recommended

In several areas within the six subsections of the Fresno to Bakersfield Section, alignment modifications were considered as a result of further engineering analysis and stakeholder consultation. These modifications and the resulting recommendations are described below and depicted in maps for each subsection.

Fresno Subsection

Within the Fresno Subsection (see Figure 3), three modifications were considered.

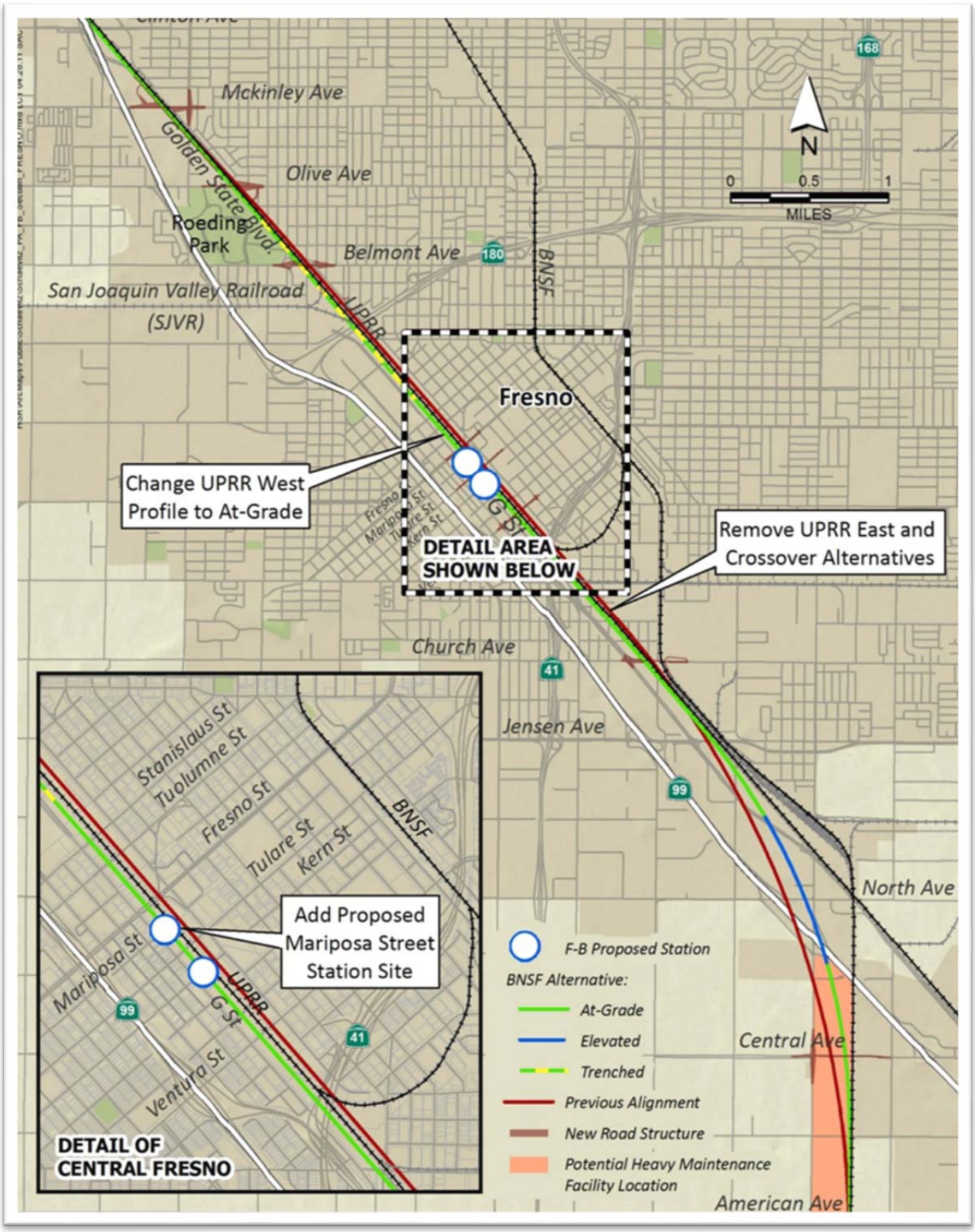
- In response to concerns from local stakeholders about the effects of the elevated HST viaduct and in consideration of long-term lifecycle costs, changing the HST profile from elevated to at-grade was evaluated for the full Fresno Subsection. As a result of the evaluation, a 2.8-mile section of the alignment (San Joaquin Street to Jensen Avenue) was identified as suitable for placement largely at-grade, with a short section in a trench to pass under the San Joaquin Valley Railroad and SR-180. This change would provide benefits to

city residents and property owners as a result of reduced noise and visual impacts, improved traffic flow due to the creation of several road grade separations over the Union Pacific Railroad, and greater freight railroad safety from closing of several at-grade crossings. The placement of the alignment at-grade would also enhance the City of Fresno's ability to integrate the HST station into its plans for the downtown (see separate discussion below). It would also reduce overall life cycle costs for the HST project and for local stakeholders. Thus, it is recommended that the UPRR West Alternative profile be changed from elevated to at-grade from San Joaquin Street to Jensen Avenue.

- As described in the Preliminary AA Report, the UPRR East Alternative would parallel the UPRR West Alternative on the east side of the UPRR right-of-way and the Crossover Alternative would be a combination of the UPRR West and East Alternatives requiring two crossovers of the UPRR facility. In response to the additional design analysis of these alternatives, as well as preferences expressed by the City of Fresno, it is recommended that both be removed from further consideration. The benefits of removing these alternatives would mirror those associated with changing the western alignment from elevated to at-grade. In addition, removal of the eastern alignment would have the added benefits of eliminating direct impacts to the historic SP Depot and allowing the City additional flexibility in planning for development of the property that otherwise would have been occupied by the HST guideway and structures. Removal of these alternatives would eliminate the need for expensive elevated crossings of the UPRR tracks.

- In conjunction with the recommendation to change the UPRR West Alternative to at-grade and the recommendation to remove the UPRR East and Crossover Alternatives from further consideration, it is recommended that a new alternative HST station be added on the UPRR West Alignment at Mariposa Street. The Mariposa location is strongly supported by the City of Fresno and had been assumed for the UPRR East alignment alternative. The addition of the Mariposa station on the at-grade UPRR West Alignment thus responds to the City's preference for that location. This location is a new alternate to the Kern Street location, which was included in the Preliminary AA Report as the only station location for the western alignment alternative. The City of Fresno believes this site is more consistent with the City's vision for the station area, and will allow the City to establish the HST station as a focal point for its downtown economic development and redevelopment initiatives.

Figure 3. Fresno Subsection



Hanford/Kings County Subsection

Based on extensive discussions with agricultural stakeholders, as well as additional engineering design analysis, a shift in the HST alignment is recommended in two locations within the Hanford/Kings County Subsection (see Figure 4) The first is between Conejo and the proposed Kings-Tulare Regional (KTR) Station (east of Hanford at SR-198), and the second is between Idaho Avenue (south of the KTR Station) and Niles Avenue (north of Corcoran). In the case of the northern shift, the new alignment would more directly follow property boundaries and the 7½ Avenue utilities corridor which runs north-south through the area. While this shift has the benefit of being less disruptive to agricultural properties and operations (including dairies) and of being more consistent with the Authority's objective of following existing transportation and utility corridors as closely as possible, it does result in displacement of several residential properties in the Lacey Rural Community. The southern shift would allow the HST alignment to avoid the Kaweah Delta Water Conservation District's Tulare Lakebed Mitigation Site, which covers approximately 1,300 acres north of Corcoran (east of SR-43 and north of Nevada Avenue), as well as approximately five acres of sensitive wetlands and other high quality wetland resources. This shift would also avoid key agricultural operations west of SR-43.

Corcoran Subsection

Two potential modifications to the HST alignment were evaluated in the Corcoran Subsection (see Figure 5).

- In response to concerns from local stakeholders about the effects of the elevated HST viaduct and in consideration of long-term lifecycle costs, a new at-grade profile west of the BNSF tracks was evaluated. This alternative would begin at Nevada Avenue north of Corcoran and end at Quebec Avenue (Avenue 144) south of Corcoran. Placement of this section at-grade would benefit city residents and property owners as a result of reduced noise and visual impacts, improved traffic flow due to the creation of several road grade separations over the BNSF tracks, and greater freight railroad safety from closing of several at-grade crossings. In addition, the HST project and local stakeholders would benefit from a reduction in overall life cycle costs. For these reasons, the addition of a new at-grade alternative west of the BNSF tracks is recommended.
- The recommended realignment of the Hanford alignment to avoid wetlands north of Corcoran would make it possible to shift the Corcoran Bypass Alternative to west, closer to Corcoran. Because of this shift, the bypass would be considerably shorter and would have less impact on agricultural resources and facilities, although it would affect some additional residential properties. It would also reduce overall project life cycle costs. Thus, a westward shift in the Corcoran Bypass Alternative is recommended.

Figure 4. Hanford/Kings County Subsection

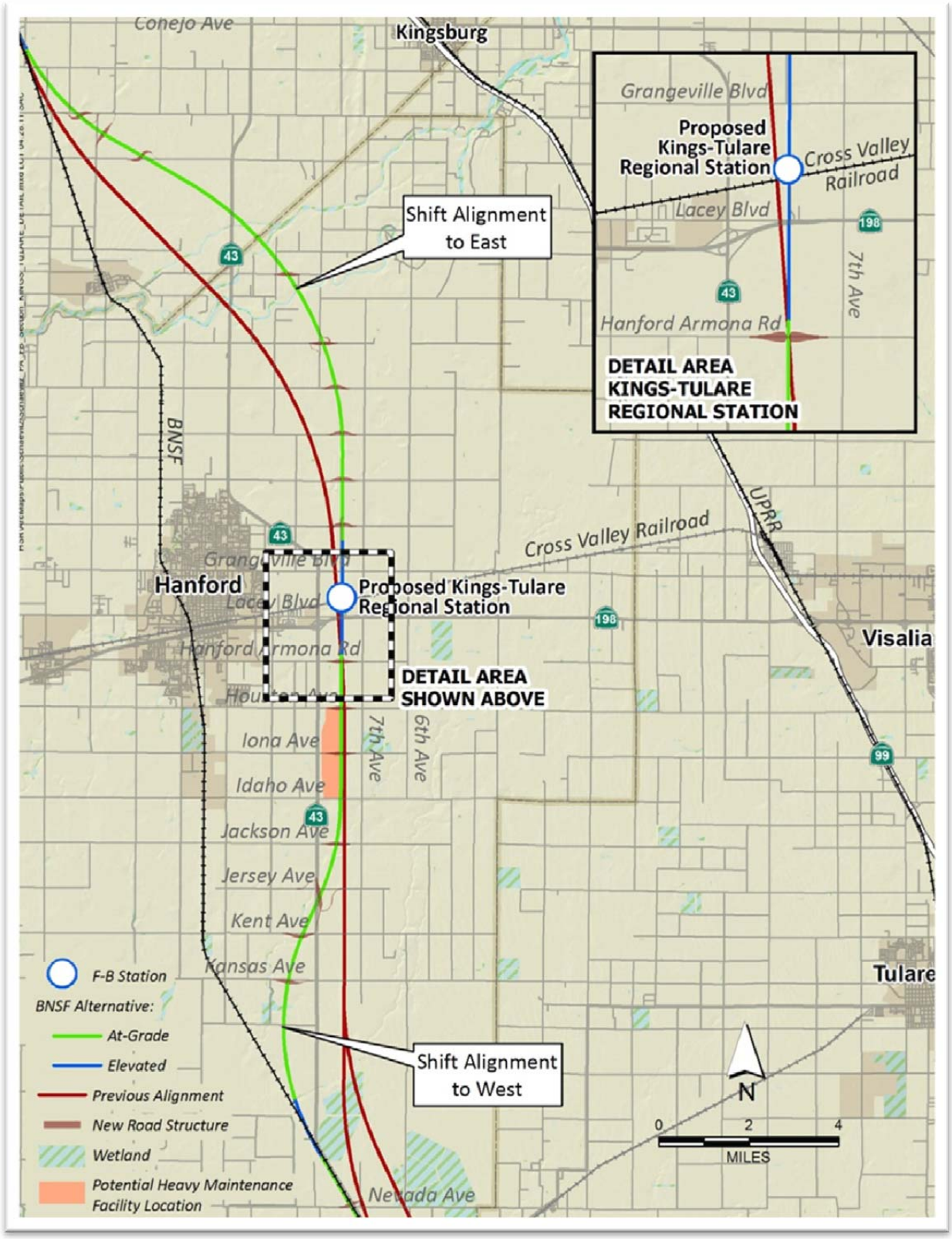


Figure 5. Corcoran Subsection

Allensworth Subsection

Through the course of discussions with various stakeholders, including representatives of Allensworth State Historic Park, concerns were raised about the potential effects of the HST guideway on sensitive resources. As a result of these discussions, alignment modifications were developed that would shift the guideway to the west of the previously approved corridor (see Figure 6). Specifically, from approximately 5 miles north of Allensworth State Historic Park to Taussig Avenue, a total distance of 19.1 miles, the Allensworth Bypass alignment could be shifted to the west. This shift would allow the alignment to further avoid encroachment into sensitive natural resources, including wetlands and endangered species habitat. It would also reduce impacts on agricultural land and facilities as well. Thus, it is recommended that the Allensworth Bypass alignment be modified to reflect this shift.

Wasco-Shafter Subsection

Potential modifications were evaluated in five areas within the Wasco-Shafter Subsection (see Figure 7).

- In the area around Kimberlina Road, between Wasco and Shafter, the previously approved HST alignment created a “landlocked” area between the proposed HST guideway and BNSF tracks. A minor westward shift of the HST guideway to operate closer to the BNSF tracks, as well as a minor shift in the BNSF tracks in one location, would largely eliminate this problem. In addition to removing the landlocked area, the shifted alignment would also avoid agricultural property and facilities immediately east. Thus, it is recommended that the HST alignment be shifted as described.

- In response to concerns from local stakeholders about the effects of the elevated HST viaduct and in consideration of long-term lifecycle costs, a profile change in the BNSF alternative from elevated to at-grade between Merced Avenue and Fresno Avenue (north of Shafter) is recommended. This approximately 1.5-mile change would result in the addition of two grade separations, thereby improving local traffic flow and freight railroad safety, as well as reducing overall life cycle costs.

- Also in response to concerns from local stakeholders about the effects of the elevated HST viaduct and in consideration of long-term lifecycle costs, two modifications are recommended for the HST alignment along the BNSF corridor between Los Angeles Avenue (south of Shafter) and Hageman Road (in Bakersfield). The first would be to change the profile of this 9.2-mile section from elevated to at-grade, thus benefiting residents and property owners as a result as a result of reduced noise and visual impacts, improved traffic flow because of several road grade separations over the BNSF tracks, and greater freight railroad safety from closing of several at-grade crossings. The second modification would be a shift of the alignment from the east side to the west side of the BNSF tracks, thereby removing conflicts with the Shafter International Trade and Transportation Center and the Shafter Cemetery. This shift would also reduce the need to move or relocate various BNSF track facilities. It is thus recommended that the BNSF Alternative be changed from an elevated to at-grade profile and shifted from the east side to the west side of the BNSF tracks.

- The Wasco-Shafter Bypass alternative, as described in the Supplemental AA Report, included a few areas where the HST guideway might conflict with important community

resources. Specifically, the alignment either encroached upon or passed near a potentially historic property near the Lerdo Highway on the eastern edge of Shafter (O'Brien stables and training oval) and various active oil extraction and storage facilities near Merced Avenue. A slight shift of the HST alignment to the east would avoid these potential problems. Thus, it is recommended that the Wasco-Shafter Bypass Alternative be shifted to the east.

- With the recommendation that the HST alignment be shifted to the west of side of the BNSF tracks south of Shafter, access to the heavy maintenance facility (HMF) proposed by the Kern Council of Governments (Kern COG) on the east side of the tracks would require a more complex track design. Thus, in response to a request from Kern COG, the HMF site south of Shafter was shifted so that it can be accessed from the shifted alignment. This shifted HMF site is recommended. The total area of land required on the west, accessibility to jobs, and traffic impact are similar to those characteristics of the proposed HMF site on the east side of BNSF.

Bakersfield Subsection

The Preliminary AA Report recommended that the HST guideway through the entire Bakersfield Subsection be placed on an elevated viaduct. In response to a variety of concerns with the elevated HST structure, opportunities to place the HST guideway at-grade within the Bakersfield Subsection were evaluated. Based on this evaluation, it was determined that changing to an at-grade profile would benefit residents and property owners as a result of reduced noise and visual impacts, would improve traffic flow because of several road grade separations over the BNSF tracks, and would result in greater freight railroad safety from closing of several at-grade crossings. The HST project and local stakeholders would also receive a modest benefit in reducing life cycle costs. It would also result in encroachment on additional residential properties. Nonetheless, it is recommended that the HST between Hageman Road and Palm Avenue be changed from elevated to at-grade (see Figure 8). The total length of this modification is 2.3 miles, and applies to both the Bakersfield North and South Alternatives.

Figure 6. Allensworth Subsection

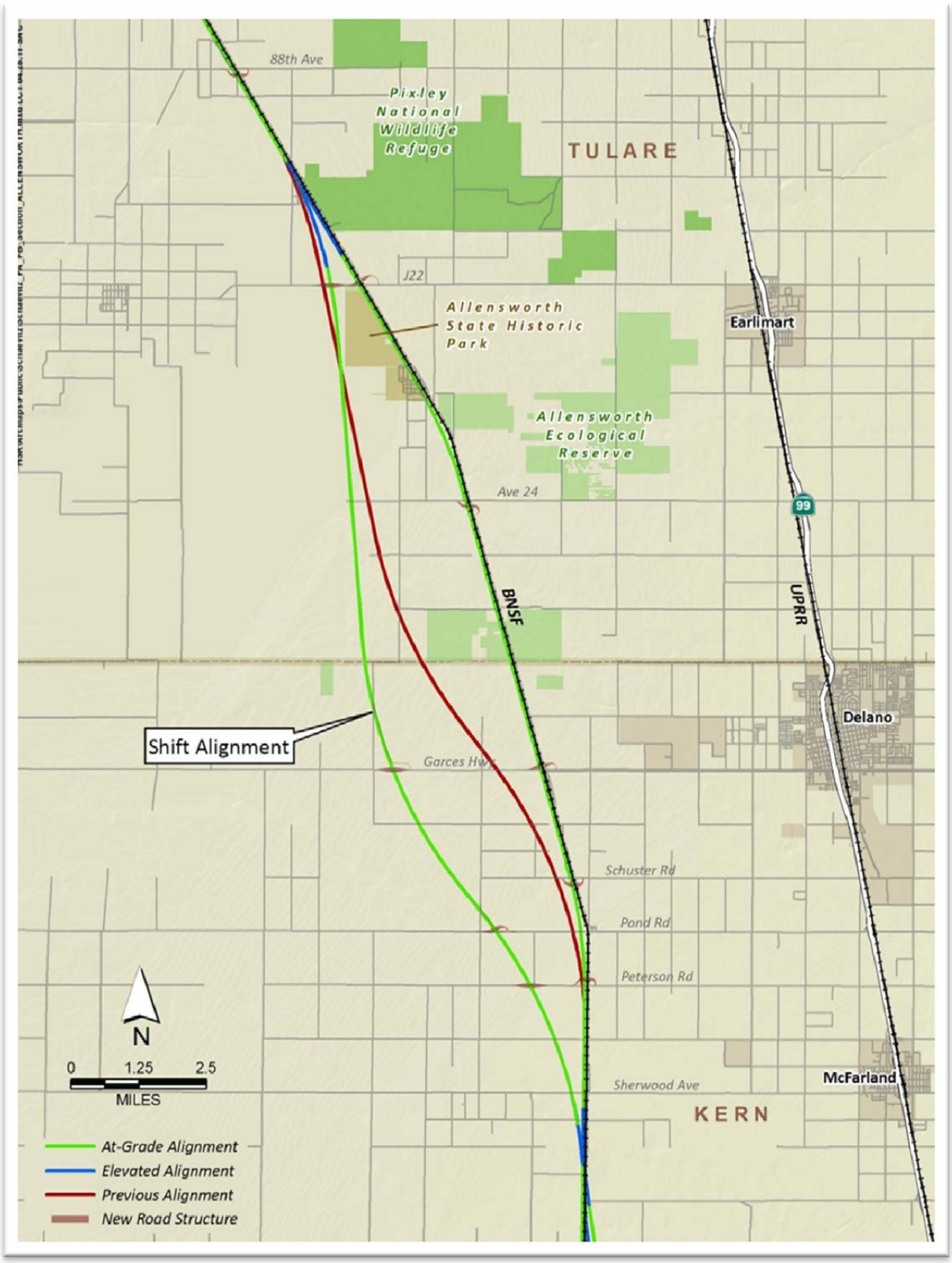


Figure 7. Wasco-Shafter Subsection

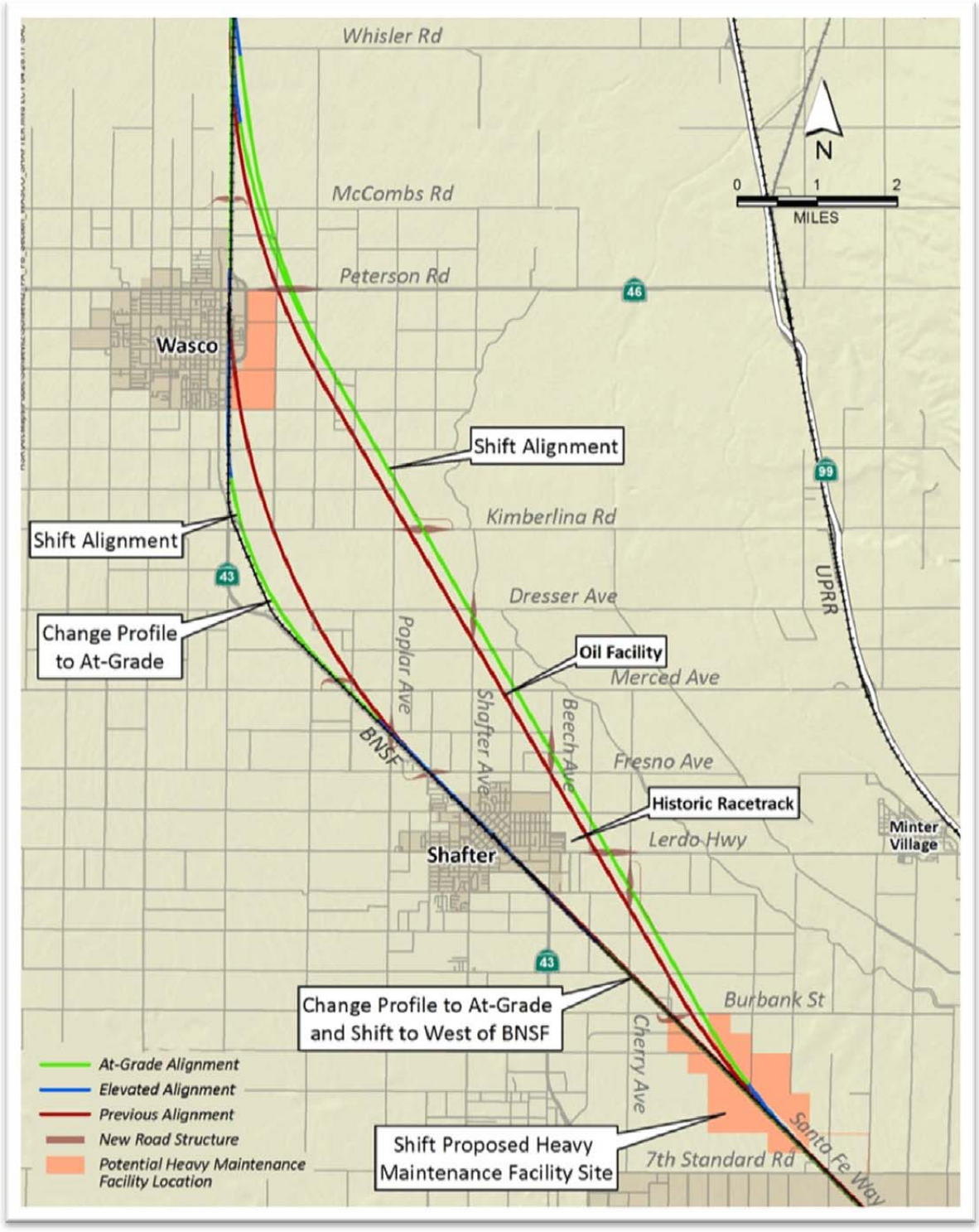
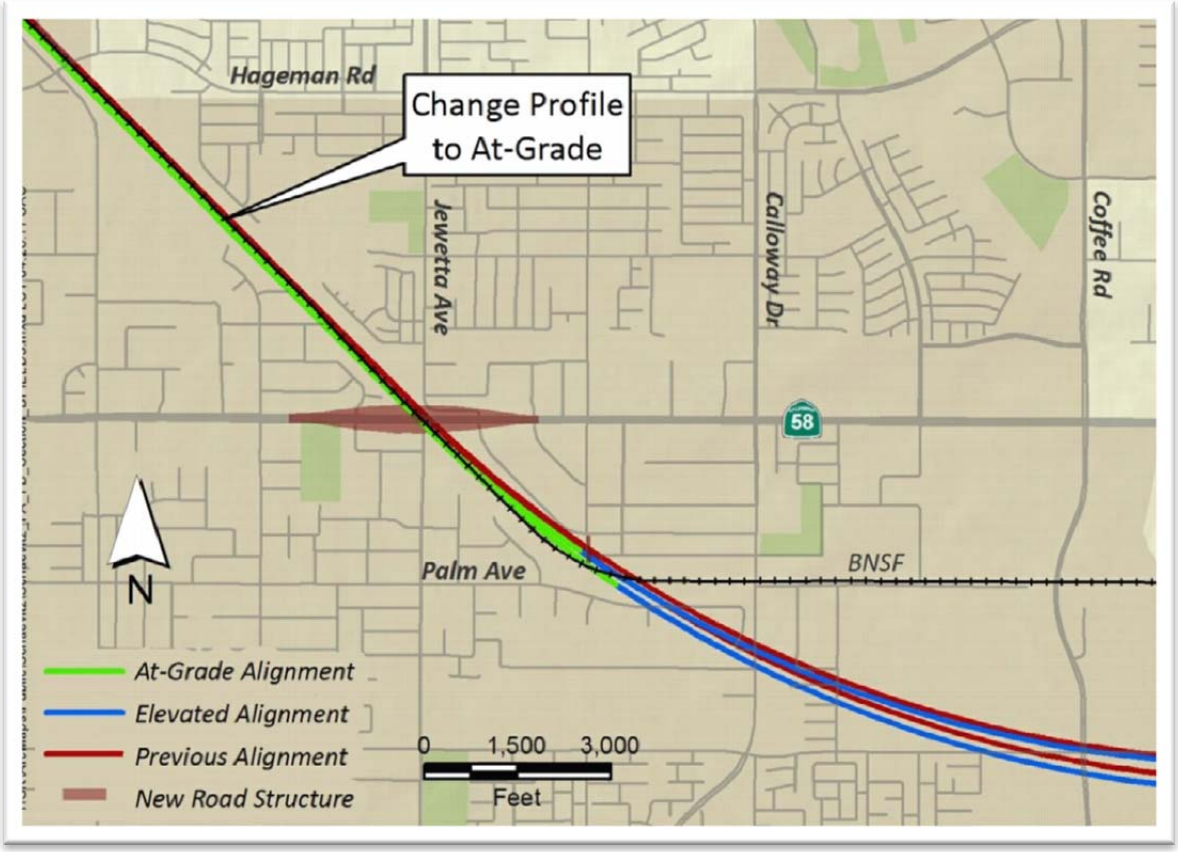


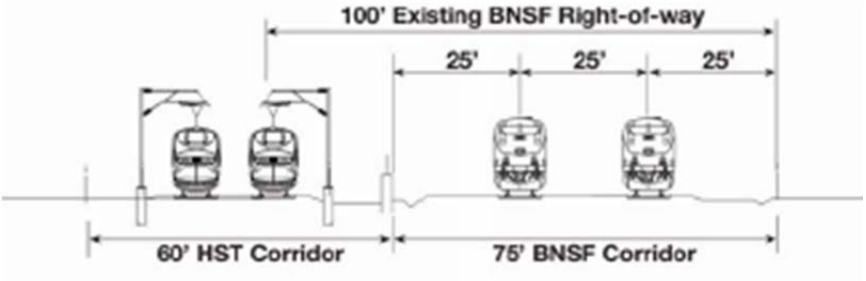
Figure 8. Bakersfield Subsection (West Bakersfield Detail)



Use of BNSF Right-of-Way

Through the Preliminary AA and Supplemental AA reports, it was planned that the HST would share BNSF right-of-way wherever possible to the extent allowed by safety considerations, BNSF business and operations requirements, and infrastructure conflicts. Under this concept of a shared right-of-way, the BNSF tracks would be moved to one side of the right-of-way, retaining enough width to accommodate two BNSF tracks in locations where there currently is only one track. The HST alignment would be placed in a combined right-of-way consisting of a part of the BNSF right-of-way and new right-of-way acquired for the HST project (see typical cross-section below).

Typical Cross Section for Shared Right-of-Way



Locating the HST less than 100 feet from a freight rail requires construction of a barrier between the two sets of tracks to avoid a train-to-train collision in the event of a derailment. When the HST and freight tracks are about 33 feet apart or less, a substantial engineered wall would be required to safely separate the two. While it is technically feasible to construct a barrier that can contain a derailed train, freight rail operators continue to be concerned with the safety and liability issues associated with potential accidents in a shared right-of-way.

As indicated above, in most places where the HST alignment runs parallel to the BNSF tracks, it would be necessary to move those tracks to one side of the right-of-way in order to make room for the HST and a safety barrier. This creates substantially more complex construction staging requirements for the project.

A combination of safety and liability concerns and increased construction complexity could make a shared right-of-way between BNSF and the HST undesirable. While the Authority continues to explore the possibility of shared right-of-way with BNSF (particularly through very sensitive areas), the potential to reach an agreement with BNSF to utilize portions of their right-of-way remains uncertain. Therefore, the Fresno to Bakersfield Section Draft EIR/EIS assumes there would be no shared right-of-way, and the HST alignment would be located at least 100 feet from the BNSF railbed where the two lines would be parallel. This would provide a worse-case estimate of the potential environmental impacts associated with the project.

Subsequent discussions with the BNSF and refinement of preliminary designs has resulted in a need to change this approach – namely, to keep the HST outside of BNSF right-of-way, but otherwise remain as close as possible to them. Thus, it is recommended that the alignment definitions for all alternatives be changed from “share BNSF right-of-way” to “remain adjacent to BNSF right-of-way.”

2.0 RECOMMENDATIONS

The staff recommends consideration for the Board to approve the following:

Fresno Subsection

- ✓ Change UPRR West elevated profile to at-grade from Clinton to Jensen
- ✓ Add a second station location at Mariposa Street
- × Remove UPRR East and Crossover alternatives from further consideration

Hanford/Kings County Subsection

- ✓ Shift existing alignment between Conejo and Corcoran in two locations

Corcoran Subsection

- ✓ Add a new at-grade alignment on west side of BNSF through Corcoran
- ✓ Shift Corcoran Bypass alignment closer to Corcoran

Allensworth Subsection

- ✓ Shift Allensworth Bypass alignment to the west

Wasco-Shafter Subsection

- ✓ Shift alignment closer to BNSF near Kimberlina Road
- ✓ North of Shafter: Change profile from elevated to at-grade
- ✓ South of Shafter: Change profile from elevated to at-grade, and shift alignment from east to west of BNSF
- ✓ Shift Wasco-Shafter Bypass to the east
- ✓ Shift Shafter HMF site west of BNSF

Bakersfield Subsection

- ✓ Change from elevated to at-grade profile from Hageman Road to Palm Avenue

BNSF Right-of-Way

- ✓ Change alignment definitions for all alternatives from “share BNSF right-of-way” to “remain adjacent to BNSF right-of-way”

Figure 9 shows the alignments, design options, and stations recommended to be carried forward.

Figure 9. Alignment Alternatives, Design Options, and Stations to be Carried Forward